

Applicant : Santa Wiryam et al.
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AMENDMENTS TO THE CLAIMS:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for processing communication in a device having a first interface and a second interface comprising:
accepting data packets at the first interface;
for each accepted packet, identifying one of a plurality of classes of data flows associated with said packet;
for at least some of the accepted packets, queuing said packets according to the identified class for said packet;
controlling a rate of arrival of packets at the first interface, the controlling being performed in the device; and
transmitting the accepted packets through the second ~~communication~~ interface according a policy associated with the plurality of classes of data flows.
2. (Original) The method of claim 1 wherein identifying the class of data flows includes examining network layer addressing data in the accepted packet.
3. (Previously Presented) The method of claim 2 wherein examining the network layer addressing data includes identifying destination network layer addresses of the packets.
4. (Original) The method of claim 2 wherein identifying the class of data flows includes examining application layer data in the packets.
5. (Original) The method of claim 1 further comprising, for at least some other of the accepted packets, passing the accepted packets to a proxy application hosted in the ~~communication~~ device.

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6. (Previously Presented) The method of claim 5 wherein at least some of the accepted packets that are passed to the proxy application each include a network layer destination address of a device other than the communication device and that is accessible through the second interface.

7. (Original) The method of claim 5 wherein information in the packets passed to the proxy application is transmitted from the second interface in packets with source network layer addresses associated with the communication device.

8. (Original) The method of claim 5 wherein information in the packets passed to the proxy application is transmitted from the second interface in packets with source network layer addresses equal to the source network layer addresses of corresponding accepted packets.

9. (Original) The method of claim 5 further comprising, for the packets that are passed to the proxy application, queuing records associated with the accepted packets, and transmitting packets from the proxy application according to the queued records.

10. (Original) The method of claim 1 wherein the communication device communicates with devices over the first interface and the second interface as a data link layer bridge.

11. (Original) The method of claim 10 wherein the accepted packets are transmitted without modification of their source and destination network layer addresses.

12. (Original) The method of claim 1 further comprising accepting a specification of the policy using a graphical user interface.

13. (Previously Presented) The method of claim 1 further comprising displaying data related to utilization of bandwidth allocated to the classes of data flows on the graphical user interface.

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14. (Original) The method of claim 1 further comprising operating the communication device in a second mode, including passing packets between the first interface and the second interface without modification.

15. (Original) The method of claim 14 wherein operating in the second mode further includes monitoring the packets passing between the first interface and the second interface.

16. (Original) The method of claim 15 wherein monitoring the packets includes identifying a class of data flows associated with each packet.

17. (Original) The method of claim 1 further comprising operating the communication device in a third mode, including directly connecting the first interface to the second interface.

18. (Original) The method of claim 17 further comprising switching to the third mode of operation in the event of a fault at the communication device.

19. (Currently Amended) A communication device comprising:
a plurality of network interfaces, including a first network interface, and a second network interface, wherein the communication device is configured to pass packets belonging to a plurality of classes of data flows between the network interfaces according to a programmable policy;

a plurality of queues, each associated with a different one of the classes of data flows, for accepting packets from the first network interface;

storage for configuration data, including storage for a configurable policy for the classes of data flows;

a rate shaper for controlling a rate of arrival of packets at the first network interface according to the configurable policy; and

a scheduler for determining when to dequeue data packets queued in the plurality of queues according to the configurable policy for the classes of data flows.

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20. (Original) The device of claim 19 wherein the device includes the capability to functions as a data link layer bridge when passing data packets between the network interfaces.

21. (Original) The device of claim 19 further comprising a proxy application for processing data accepted at the first interface.

22. (Original) The device of claim 21 further comprising a cache for servicing requests in data processed by the proxy application.

23. (Original) The device of claim 19 further comprising a bypass switch for coupling the first interface to the second interface in a second operating mode.

24. (Original) The device of claim 23 wherein the bypass switch includes a hub for coupling the first interface to both the second interface and to a processor of the communication device, whereby data passing between the first interface and the second interface can be monitored by the communication device without modifying the communication.

25. (Previously Presented) The method of claim 1 wherein the policy includes at least one of a priority and a bandwidth allocation for one of the classes of data flows.

26. (Previously Presented) The method of claim 25 wherein controlling the rate of arrival of packets includes controlling the rate according to the policy associated with the classes of data flows.

27. (Previously Presented) The method of claim 26 wherein controlling the rate of arrivals of packets includes rate shaping data flows associated with the accepted packets.

28. (Previously Presented) The method of claim 5 wherein the proxy application performs a data multiplexing function.

29. (Previously Presented) The method of claim 5 wherein the proxy application performs a data compression function.

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30. (Previously Presented) The method of claim 5 wherein the proxy application performs a voice-over-IP function.

31. (Previously Presented) The device of claim 19 wherein the configurable policy for a data flow includes at least one of a priority and a bandwidth allocation.

32. (Canceled).